Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-2. (cancelled)

3. (original) A method for producing an asymmetric phosphinoselenoic chloride, the method comprising:

mixing arylphosphine dichloride, an organometallic reagent, and selenium in a solvent so as to cause a reaction of the arylphosphine dichloride, the organometallic reagent, and the selenium,

wherein the arylphosphine dichloride is represented by the general formula (1):

$ArPCl_2$ (1)

wherein Ar represents an aryl group; and

the organometallic reagent is represented by the general formula (2) or (3):

R-M (2)

wherein R represents an aryl group, an alkyl group having 3 or more carbon atoms, or an alkoxy group; and M represents lithium or sodium,

R-NX (3)

wherein R represents an aryl group, an alkyl group having 3 or more carbon atoms, or an alkoxy group; N represents magnesium, copper, or zinc; and X represents halogen.

4. (original) The method according to claim 3, wherein Ar in the general formula (1) represents a phenyl group and R in the general formulas (2) and (3) represents an isopropyl group, a cyclohexyl group, a tert-butyl group, a 2-methoxyphenyl group, a 1-methylpropyl group, a 4-chlorophenyl group, or a menthyloxy group.

5. (original) The method according to claim 3, wherein the reaction of the arylphosphine dichloride, the organometallic reagent, and the selenium is carried out at a temperature of 0 to 120°C.

6. (original) The method according to claim 3, wherein the reaction of the arylphosphine dichloride, the organometallic reagent, and the selenium is carried out for 30 to 90 minutes.

7. (original) The method according to claim 3, wherein the reaction of the arylphosphine dichloride, the organometallic reagent, and the selenium is carried out at a temperature of 0 to 120°C for 30 to 90 minutes.

8. (original) The method according to claim 3, wherein the solvent is tetrahydrofuran or toluene.

9. (original) The method according to claim 3, wherein said mixing arylphosphine dichloride, an organometallic reagent, and selenium in a solvent is carried out by mixing a solvent containing arylphosphine dichloride and selenium and a solvent containing an organometallic reagent.

10. (original) The method according to claim 3, wherein the reaction of the arylphosphine dichloride, the organometallic reagent, and the selenium is carried out by causing a reaction of the selenium with a reaction intermediate obtained by a reaction of the arylphosphine dichloride and the organometallic reagent.